*Title Page

Running head: Personality and Career Adaptability

Understanding the trait basis of career adaptability:

A two-wave mediation analysis among Chinese university students

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Abstract

To investigate the mechanisms through which the basic traits (big-five personality and approach/avoidance traits) predict career adaptability, and develop a more systematic view of the components of career adaptivity, we conducted a two-wave survey study among 206 Chinese university students. Drawing on career construction theory and the distal-proximal framework of motivation, we incorporated core self-evaluation (CSE), proactive personality and learning goal orientation (LGO) as the key mediators and tested their relations with basic traits and career adaptability. It was found that these dispositional predictors (measured at Time 1) account for 43% (*adjusted* R^2) of the variance in career adaptability (measured at Time 2). In addition, CSE mediates the effects of conscientiousness, neuroticism, approach and avoidance traits on career adaptability; LGO and proactive personality mediate the effects of openness to experience, conscientiousness as well as approach trait on career adaptability. When the three mediators (CSE, LGO and proactive personality) are put into the model, only extraversion has a remaining direct effect on career adaptability. Implications of the findings are discussed.

Keywords: career adaptability, big-five personality, approach/avoidance traits

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1. Introduction

Career adaptability (CA) is defined as the psychological resources (i.e., concern, control, curiosity, and confidence) that help to regulate individuals' goal-pursuing process in various career transitions (Savickas, 1997). According to career construction theory (Savickas, 2013; Savickas & Porfeli, 2012), career adaptivity, which refers to individuals' flexibility or motivation to take actions to cope with the changing vocational tasks, serves as an important antecedent for career adaptability. It was suggested that the willingness to engage in career development activities can be reflected by the basic traits depicted in extant personality theories (e.g., the big-five personality model), but no common operationalization of adaptivity has been offered (Savickas & Porfeli, 2012). As a result, career adaptivity has been conceptualized and measured in diverse ways (Rudolph, Lavigne, & Zacher, 2017). Drawing on basic personality theories such as the big-five personality (Goldberg, 1990; McCrae & Costa, 1987) and the approach/avoidance personality model (Elliot & Thrash, 2002), researchers have found that both the big-five personality (Teixeira, Bardagi, Lassance, Magalhães, & Duarte, 2012; van Vianen, Klehe, Koen, & Dries, 2012; Zacher, 2014) and the approach/avoidance traits (van Vianen et al., 2012; Tolentino, Garcia, Lu, Restubog, Bordia, & Plewa, 2014; Li et al., 2015) serve as important predictors for career adaptability.

Although much is known about the main effects of big-five personality and approach/avoidance traits on career adaptability, extant research has yielded limited insights into the mechanisms through which these indicators of career adaptivity predict career adaptability. Given that recent research has identified many new dispositional predictors for CA, such as core

self-evaluation (Öncel, 2014; Hirschi, Herrmann & Keller, 2015), self-esteem (Cai et al. 2015), proactive personality (van Vianen et al., 2012; Tolentino et al. 2014; Cai et al. 2015), psychological capital (hope, resilience and optimism; Buyukgoze-Kavas, 2016), future orientation (Rudolph et al., 2017), and so on, it is necessary to develop a more integrative model to identify the proximal predictors that link basic traits to CA, and to develop a more systematic view of the components of career adaptivity. A more accurate understanding of the distal and proximal predictors of CA can provide educators and counselors with practical knowledge about the disposition profile indicative of low adaptivity. Findings on the proximal predictors of CA can also help practitioners to design relevant interventions pertinent to the specific indicators of low adaptivity, in order to better engage individuals in the self-improvement activities towards optimal adaptation (e.g., Betz, 2004).

The distal-proximal framework of motivation (Barrick & Mount, 2005; Kanfer, 1990, 1992) suggests that distal traits, such as big-five personality and approach/avoidance traits, exert influence on individuals' behaviors through their effects on proximal constructs, such as motivational states. Informed by this perspective, we propose that basic traits may affect career adaptability through dispositional factors that can strongly drive individuals' motivation and intention to build adaptive career resources. Since previous research has shown that core self-evaluation (CSE, people's essential evaluations on their self-worth, competencies and capabilities, Judge, Locke, Durham & Kluger, 1998), learning goal orientation (LGO, the tendency of developing competence and mastering new things, Dweck, 1986) and proactive personality (the orientation to take actions and make changes to the surrounding environment, Bateman & Crant, 1993) are the dispositional factors that play important roles in driving individuals' goal-setting and goal-pursuit activities, we argue that they may link basic traits to

career adaptability. We gathered data from a sample of Chinese university students to test these ideas. To reduce the common method variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), we measured the dispositional predictors and career adaptability separately with a time interval of one month.

By doing this, we attempt to make contributions to literature in several ways. First, although career construction theory outlines a sequential model from career adaptivity to adaptability, adapting behaviors and adaptive outcomes (Savickas, 2013), not much has been done to examine how the diverse indicators of career adaptivity affect the development of adaptive resources. Drawing on the distal-proximal framework, we examined the mediating influences of CSE, LGO and proactive personality on the relationship between basic traits (big-five personality and approach/avoidance traits) and career adaptability, which will advance current understanding on the mechanisms through which basic traits predict career adaptability. Secondly, the results of this study also help to address the lack of a systematic conceptualization of career adaptivity. By integrating the basic traits and other dispositional factors in the same model, this study serves as the first attempt to develop a more structural view of the components of career adaptivity.

1.1 Basic traits and career adaptability

The big-five personality model (Goldberg, 1990; McCrae & Costa, 1987) is a widely accepted approach to explaining individual differences in work and career-related outcomes. The effects of these five personality dimensions, namely neuroticism, conscientiousness, extraversion, agreeableness and openness to experience, on career adaptability have been examined among university student samples in Brazil (Teixeira et al., 2012), the Netherlands (van Vianen et al., 2015) and China (Li et al., 2015), as well as in an employee sample from Australia (Zacher,

2014). These studies consistently show that career adaptability is positively related to extraversion, openness to experience and conscientiousness. In addition, the positive effect of agreeableness and the negative effect of neuroticism on career adaptability are also revealed in the contexts of Brazil, China, and Australia (Li et al., 2015; Teixeira et al., 2012; Zacher, 2014).

While the big-five model represents the trait adjective approach (McCrae & Costa, 1987), the approach/avoidance model offers a motivational system approach to personality (Elliot & Thrash, 2002). According to Elliot and Thrash (2002), the approach trait refers to general sensitivity to current or imagined positive stimuli, whereas the avoidance trait reflects sensitivity to current or imagined negative stimuli. This approach–avoidance perspective complements the big-five model in explaining individual differences in cognitive, affective and behavioral outcomes. For example, previous research found that career adaptability was positively related to promotion focus (van Vianen et al., 2012) and the behavioral activation system (Li et al., 2015), which are indicators of approach tendencies; meanwhile, career adaptability has also been found to be negatively related to indicators of avoidance tendencies, such as prevention focus (van Vianen et al., 2012) and the behavioral inhibition system (Li et al., 2015). These studies offered supportive evidence on the significant relations between approach/avoidance traits and career adaptability, but neither of them used a direct measure of approach/avoidance traits to examine these relations. In this study, we adopted an updated measure of approach/avoidance traits to examine how these traits predicted Chinese university students' career adaptability (Elliot & Thrash, 2010). Based on previous studies, we propose that:

Hypothesis 1. Career adaptability correlates positively with openness to experience (H1a), conscientiousness (H1b), extraversion (H1c), agreeableness (H1d), the approach trait (H1e), and correlates negatively with neuroticism (H1f) and the avoidance trait (H1g).

Although the above traits have been found to be important indicators of career adaptivity, extant research has not examined how these traits drive individuals' effort in developing their career adaptability (Savickas, 2013). In this study, we adopted the distal-proximal framework of motivation (Barrick & Mount, 2005; Kanfer, 1990, 1992) to analyze the underlying mechanisms in this process. Kanfer (1990, 1992) developed the distal-proximal framework to organize the diverse motivational constructs according to their conceptual proximity to action and performance. According to this framework (Barrick & Mount, 2005; Kanfer, 1990, 1992), basic traits, such as big-five personality, are termed distal factors because the effects of these constructs on behavior and performance are often indirect. Personality may exert a regular influence on goal-setting and goal-pursuing processes, which in turn affect one's behavior and performance in different situations. For example, Ng, Ang, and Chan (2008) found that when predicting leadership effectiveness, the effect of basic traits, such as neuroticism, extraversion, and conscientiousness were mediated by proximal factors such as leadership self-efficacy.

Consistent with the above discussions, in this study, we propose that the effects of basic traits (i.e. big-five personality and approach/avoidance traits) on career adaptability can be explained by dispositional factors that proximally tap into individuals' career goal-setting and goal-pursuing processes. In order to identify appropriate mediators, we reviewed the previously mentioned literature to identify dispositional factors which have a strong trait basis, and also serve as strong driving forces for individuals' career goal-setting and goal-pursuit activities. As a result, we chose to use core self-evaluation (CSE), learning goal orientation (LGO) and proactive personality as the potential mediators, since they have been found to be important predictors of career adaptability (Rudolph et al., 2017), and also serve as important mediators for the relations between basic traits and work-related outcomes (e.g., Spitzmuller, Sin, Howe, & Fatimah, 2015;

Zweig & Webster, 2004; Bono & Judge, 2003). In the next section, we present our arguments on how these constructs may account for the effects of basic traits on career adaptability.

1.2 The mediation role of core self-evaluation (CSE)

Core self-evaluation (CSE) refers to peoples' general evaluations about their self-worth and competencies (Judge et al., 1998; Judge, Erez, Bono & Thoresen, 2002), which consist of four dimensions: self-esteem (evaluation of self-worth, Rosenberg, 1965), generalized self-efficacy (beliefs of the ability to succeed, Chen, Gully, & Eden, 2001), locus of control (belief that one's power can bring desired outcomes, Rotter, 1966) and emotional stability (the feeling of calm and secure, Eysenck, 1990). CSE has been found to be closely related to basic traits. As emotional stability is a component of CSE, previous research has revealed that CSE is negatively related to neuroticism (Bono & Judge, 2003; Robins, Tracy, Trzesniewski, Potter, & Gosling, 2001). In addition, extraversion and conscientiousness have also been found to positively correlate with CSE (Judge et al., 2002; Robins et al., 2001). On the other hand, previous studies have also demonstrated close relations between approach/avoidance traits and CSE (Chang, Ferris, Johnson, Rosen, & Tan, 2011; Johnson, Rosen & Levy, 2008). For example, Ferris et al. (2011) reported that 51% of the variance of CSE can be explained by approach and avoidance traits. Results from a meta-analysis also show a positive relation between CSE and approach trait, and a negative relation between CSE and avoidance trait (Chang et al., 2011).

Apart from the solid relations with neuroticism, extraversion, conscientiousness, and approach/avoidance traits, CSE has also been found as a strong predictor of career adaptability. Since individuals high in CSE are likely to set ambitious goals and are capable of regulating themselves when pursuing these goals (Chang et al., 2011), they display more initiative, persistence, and high commitment to goals (Gagné & Deci, 2005). Consequently, individuals

with high CSE can develop high career adaptability (Öncel, 2014; Hirschi et al., 2015) and achieve career success (Judge, Hurst & Simon, 2009). Researchers also suggested that CSE is a compound trait that can convey the effects of basic traits to various outcomes in different life domains (Bono & Judge, 2003; Judge & Hurst, 2007). Based on these findings, we argue that CSE serves as a mediator for the effects of above basic traits on career adaptability (Barrick & Mount, 2005; Kanfer, 1990, 1992).

Hypothesis 2. Core self-evaluation mediates the relationships between neuroticism (H2a), extraversion (H2b), conscientiousness (H2c), the approach trait (H2d), the avoidance trait (H2e) and career adaptability.

1.3 The mediation role of learning goal orientation (LGO)

Learning goal orientation refers to a preference of developing competence and mastering new ideas (Dweck, 1986). As individuals who are open-minded and self-disciplined are more inclined to explore new opportunities for self-improvement (Costa & McCrae, 1992), openness to experience and conscientiousness demonstrate positive relations with LGO (Zweig & Webster, 2004). In addition, since individuals with LGO perceive competence as malleable, and regard challenging situations as opportunities rather than barriers, they tend to seek challenging opportunities to improve their abilities (Creed, Tilbury, Buys & Crawford, 2011). Therefore when facing challenges, individuals with high LGO are less likely to be affected by stress and tend to be emotionally calm (Zweig & Webster, 2004). From an approach/avoidance perspective, since people with LGO focus on seeking opportunities and mastering new things, they are more sensitive toward positive stimuli and the positive relation between approach trait and LGO has been established in previous work (Elliot & Thrash, 2002).

Since individuals with high LGO believe that effort can bring about enhancement in

personal competencies and situations, they actively engage in adaptive behaviors such as planning, goal striving and the welcoming of feedback (Creed et al., 2011; Tolentino et al., 2014). Therefore, we can conclude that people with high LGO tend to set challenging goals and take active action to adapt to challenging situations. Consistently, LGO has been found to be positively related to self-efficacy (Phillips & Gully, 1997), intrinsic motivation (Steele-Johnson, Beauregard, Hoover & Schmidt, 2000), career satisfaction (Godshalk & Sosik, 2003), and career adaptability (Tolentino et al., 2014). It implies that LGO is a motivational factor that can explain how basic traits predict people's psychological strength in career development. Consistently, Zweig and Webster (2004) found that LGO serves as an important mediator that links big-five traits and individuals' performance intentions. Taken together, we propose that:

Hypothesis 3. LGO mediates the relationships between openness to experience (H3a), neuroticism (H3b), conscientiousness (H3c), the approach trait (H3d) and career adaptability.

1.4 The mediation role of proactive personality

Proactive personality is defined as the orientation to take action and make changes to the surrounding environment (Bateman & Crant, 1993). Proactive personality can be examined and interpreted using the framework of the big-five model (Bateman & Crant, 1993; Spitzmuller et al., 2015). As proactive personality reflects the tendency of seeking new opportunities, being passionate and striving to achieve ambitious goals, it has been found to be positively correlated with openness to experience, extraversion and conscientiousness (Fuller & Marler, 2009; Costa & McCrae, 1992; Bateman & Crant, 1993). In addition, since the approach trait reflects individuals' tendency to seek positive outcomes, it can motivate individuals' tendency to take actions to achieve these goals (Zimmerman, Boswell, Shipp, Dunford, & Boudreau, 2011), which is reflected in proactive personality.

Previous studies have revealed that individuals with proactive personality are more engaged in career development and display more career initiative (Bateman & Crant, 1993; Seibert, Kraimer & Crant, 2001; Fuller & Marler, 2009). Moreover, proactive individuals are more frequently engaged in networking behaviors (Thompson, 2005). Due to these reasons, career adaptability is likely to be better developed among individuals with a strong proactive personality, and empirical studies have provided supportive evidence for the positive relationship between proactive personality and career adaptability (Tolentino et al. 2014; Cai et al. 2015). Therefore proactive personality could be considered as a more specific and proximal construct to understand career adaptability than basic traits (Bateman & Crant, 1993; Fuller & Marler, 2009). Previous research has revealed that proactive personality has incremental predictive validity on job and career outcomes such as job performance and career success, above and beyond the prediction of basic personality traits (Fuller & Marler, 2009; Speier & Frese, 1997; Spitzmuller et al., 2015). Therefore, we propose that:

Hypothesis 4. Proactive personality mediates the relationships between openness to experience (H4a), extraversion (H4b), conscientiousness (H4c), approach trait (H4d) and career adaptability.

The overall model of this study is shown in Figure 1. A two-wave survey study was conducted among Chinese university students to test these hypotheses (see Figure 1).

2. Method

2.1 Procedure and participants

Data were collected among Chinese undergraduates in 2015. We contacted working staff from career centers of 20 universities in China to spread an email inviting participation in this study to their undergraduate students. To enlarge the sample size, we encouraged students to

forward the invitation to their peers. Participants were rewarded by receiving a report on their career adaptability by email. In order to reduce common method bias (Podsakoff et al., 2003), we adopted a time lag of one month between the first wave (measuring dispositional factors) and second wave (measuring career adaptability) of data collection. Previous research has shown that the average test-retest correlation of big-five personality measures was .75 across 6–8 weeks (Rammstedt & John, 2007); the test-retest correlations for approach/avoidance traits across 9 weeks were above .70 (Elliot & Thrash, 2010); the test-retest correlation for core self-evaluation was .81 across one month (Judge, Erez, Bono, & Thoresen, 2003); the test-retest correlation for learning goal orientation was .66 across three months (VandeWalle, 1997); the test-retest correlation for proactive personality was .72 across three months (Bateman & Crant, 1993). The above results suggest that these dispositional factors should remain relatively stable across a one-month interval, therefore this time-lagged design can effectively reduce the common method bias without distorting the relations tested in this study (Podsakoff et al., 2003).

At time 1, 243 participants from 57 universities completed online questionnaires on demographics, big-five personality, approach/avoidance traits, CSE, LGO, as well as proactive personality. After one month (Time 2), they were reminded by an email to complete the online survey of career adaptability. The Chinese versions of big-five personality inventory (Li et al., 2015) and career adaptability scale (Hou et al., 2012) were directly adopted from previous studies. The Chinese versions of scales for approach/avoidance traits (Elliot & Thrash, 2010), CSE (Judge et al., 2003), LGO (VandeWalle, 1997), as well as proactive personality (Seibert, Crant, & Kraimer, 1999) were developed following these procedures: First, a Chinese researcher translated the English items into Chinese; second, a native English speaker who majored in Chinese language back-translated the Chinese version into English; third, the two translators then

worked together to compare the back-translation with the original scales; and fourth, the Chinese version was refined in order to finalize the Chinese version.

As a result, two hundred and six participants (84.8%) provided complete responses, which were used for data analysis. The average age of the 206 participants is 20.42 (*SD* = 1.51). Among them, 32% were males and 68% were females. In terms of university years of studying, 16% students were in the first year, 25% were in the second year; 29% of the students were in the third year, 24% were in the fourth year and 6% of them were in the fifth year. In terms of university ranking (Wu, 2012), 13% were from the first tier universities (top 50), 13% were from the second tier (top 51 to 100), 23% were from the third tier (top 101 - 150), and 51% were from the fourth tier (ranked 151st or below) universities.

2.2 Measures

2.2.1 Big-five personality. Participants' big-five personality was measured with a Chinese version of short-form big-five inventory (Li et al., 2015), which was translated from the scale developed by Hahn, Gottschling, and Spinath (2012). Evidence of internal consistency, test-retest reliability, and convergent validity compared with the NEO-PI-R is presented by Hahn, Gottschling, and Spinath (2012). The Chinese version of the scale has been used in previous research (Li et al., 2015), which demonstrated acceptable internal consistency reliability (αs $\geq$ .60) in all dimensions and its validity was supported by its predictive power on career exploration and adaptability. Each dimension was measured by 3 items and participants responded to a 5-point scale ranging from 1 (*does not apply to me at all*) to 5 (*applies to me perfectly*). Cronbach's α coefficients for the five dimensions in this study are: openness to experience (α = .79), extraversion (α = .88), agreeableness (α = .76), conscientiousness (α = .73) and neuroticism (α = .82).

2.2.2 Approach/avoidance traits. Approach/avoidance traits were measured using the 12-item

scale developed by Elliot and Thrash (2010), with approach trait and avoidance trait measured by 6 items, respectively. According to Elliot and Thrash (2010), the average Cronbach's α of approach trait across 6 studies is .81, and the average Cronbach's α of avoidance trait is .84; the criterion validity and discriminant validity was also supported by their study. In this study, participants responded to approach (α = .82) and avoidance items (α = .90) on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

2.2.3 Core self-evaluation (CSE). Participants' CSE was measured by the scale developed by Judge et al., (2003). Judge et al. (2003) found that the Cronbach's α of this scale is .84 or above in their studies and the criterion validity of this scale was supported by its positive relations with job satisfaction, job performance, and life satisfaction. In this study, participants were instructed to rate these 12 items (α = .84) from 1 (*strongly disagree*) to 5 (*strongly agree*).

2.2.4 Proactive personality. We measured participants' proactive personality with a short-form scale used in the previous study (Seibert, Crant, & Kraimer, 1999), which was adopted from the original 17-item scale developed by Bateman and Crant (1993). Seibert, Crant, and Kraimer (1999) found that this 10-item measure has good reliability (α = .86) and predictive validity is supported by its positive effects on career satisfaction. In this study, participants responded to the 10 items (α = .84) using a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

2.2.5 Learning goal orientation (LGO). LGO was measured using the 8-item scale developed by VandeWalle (1997). This measure was found to have strong internal consistency (α = .89) and its criterion validity was supported by the positive relationship with feedback seeking (VandeWalle, 1997). In this study, participants responded to the LGO scale (α = .89) on a 5-point Likert scale (1 = *strongly disagree*; 5 = *strongly agree*).

2.2.6 Career adaptability. We used the Chinese version of Career Adaptability Scale (Hou,

Leung, Li, Li, & Xu, 2012) to measure participants' career adaptability. The 24 items were divided equally into four subscales assessing career concern (e.g. "Preparing for the future"), career control (e.g. "Taking responsibility for my actions"), career curiosity (e.g. "Exploring my surroundings"), and career confidence (e.g. "Performing tasks efficiently"). Hou et al. (2012) reported that this scale exhibits high internal consistency (overall α = .89) and this measure has been widely used in the Chinese context (e.g., Cai et al., 2015; Li et al., 2015). Participants responded to adaptability items (α = .95) using a 5-point scale ranging from 1 (*not strong*) to 5 (*strongest*).

2.2.7 Control variables. In order to better estimate the effects of traits on career adaptability, we incorporated the following variables as control variables in our model: age, gender (1 = *Male*, 2 = *Female*), grade (1 = *The first year*, 2 = *The second year*, 3 = *The third year*, 4 = *The fourth year*, 5 = *The fifth year*) and the ranking of university (1 = *First tier [top 50]*, 2 = *Second tier [top 51 to 100]*, 3 = *Third tier [top 101 to 150]*, and 4 = *Fourth tier [ranked 151st or after]*).

3. Results

3.1 Descriptive statistics and correlations

The descriptive statistics and correlations among career adaptability, big five personality (including five dimensions: openness, extraversion, agreeableness, conscientiousness, neuroticism), approach trait, avoidance trait, CSE, proactive personality, and LGO are displayed in Table 1. The results show that career adaptability is positively related to openness, extraversion, agreeableness, conscientiousness and approach trait (*r*s >= .34, *p*s < .001), and negatively related to neuroticism and avoidance trait (*r*s <= -.24, *p*s < .001), which provides initial support for hypotheses H1a to H1g. In addition, career adaptability is also significantly related to CSE, LGO and proactive personality (*r*s >= .49; *p*s < .001).

3.2 Testing the mediation models

The analytic procedures proposed by Preacher and Hayes (2008) were adopted to examine the mediation models. Three criteria were used to test the mediation effects: First, the independent variables (basic traits) should significantly predict the mediators (CSE, LGO, and proactive personality); second, after the effect of independent variables is controlled (basic traits), mediators (CSE, LGO, and proactive personality) should be significantly related to dependent variable (career adaptability); third, the indirect effects through mediators must be significant in the bootstrapping tests. We conducted hierarchical regression analyses to examine the first two criteria and used the PROCESS procedures to examine the significance of indirect effects. Before analyses, we centered all continuous variables according to the advice of Aiken and West (1991).

Table 2 presents the results of hierarchical regression analyses. After controlling the effects of age, gender, university year and university rankings, CSE is predicted by neuroticism (β= -.22, p < .01), conscientiousness (β= .25, p < .001), the approach trait (β= .20, p < .01) and the avoidance trait (β= -.31, p < .001), yielding support for H2a, H2c, H2d and H2e, but not H2b, as the effect of extraversion on CSE is non-significant in this model. LGO is predicted by openness (β= .23, p < .001), conscientiousness (β= .22, p < .001) and approach trait (β= .40, p < .001), which supports hypotheses H3a, H3c and H3d, but not H3b. Proactive personality is predicted by openness (β= .32, p < .001), conscientiousness (β= .27, p < .001) and approach trait (β= .34, p < .001), which supports H4a, H4c and H4d, but not H4b, as the effect of extraversion on proactive personality is not significant. After the effects of control variables and basic traits are controlled, the effects of CSE (β= .24, p < .01), proactive personality (β= .18, p < .05) and LGO (β= .24, p < .01) are all significant, and these variables explain additional variance (R^2

Change = 9%, $p < .001$) of career adaptability. When these three mediators are incorporated in the model, all the direct effects of basic traits on career adaptability are not significant except for extraversion ($\beta = .14$, $p < .05$). These results offer support for all the mediation hypotheses except for H2b, H3b, and H4b (see Table 2).

We then conducted bootstrapping analyses in the PROCESS regressions (Preacher & Hayes, 2008) to examine the significance of these indirect effects, and we summarize all the results in Figure 2. Specifically, the indirect effects of neuroticism (95% CI = [-.10, -.01]), conscientiousness (95% CI = [.01, .11]), approach (95% CI = [.01, .11]) and avoidance traits (95% CI = [-.11, -.01]) on career adaptability through CSE are all significant, which supports hypotheses H2a, H2c, H2d and H2e. The indirect effects of openness (95% CI = [.01, .10]), conscientiousness (95% CI = [.01, .11]) and approach trait (95% CI = [.03, .16]) on career adaptability through LGO are also significant, which supports hypotheses H3a, H3c and H3d. In addition, the indirect effects of openness (95% CI = [.01, .11]), conscientiousness (95% CI = [.002, .100]) and approach trait (95% CI = [.004, .137]) on career adaptability through proactive personality are also significant, which supports hypotheses H4a, H4c and H4d. In conclusion, all the mediation hypotheses are supported except for H2b, H3b, and H4b (see Figure 2).

4. Discussion

This study aims to extend previous research on career adaptivity by examining the underlying mechanisms through which basic traits influence career adaptability. In accordance with previous research, the results of this study show that career adaptability is positively correlated with openness, extraversion, agreeableness, conscientiousness, approach trait, CSE, LGO and proactive personality, and negatively relates to neuroticism and avoidance trait. At the most general level, the results show that almost all the effects of basic traits on career

adaptability are mediated by the three mediators (CSE, LGO and proactive personality) except for extraversion, which still has a remaining direct effect on career adaptability in the final model. Theoretical and practical implications of these findings are discussed below.

First, although career construction theory (Savickas, 2013) maps the pathway from career adaptivity to adaptability, adapting behaviors and adaptation results, not much research has been done to examine how the diverse indicators of career adaptivity affect the development of career adaptability (Li et al., 2015; Teixeira et al., 2012; van Vianen et al., 2012; Zacher, 2014). This study helps to address this question by showing that distal traits influence the development of career adaptability through proximal dispositions (Barrick & Mount, 2005; Kanfer, 1990, 1992). In particular, we found that CSE mediates the effects of conscientiousness, neuroticism, approach and avoidance traits on career adaptability; LGO and proactive personality mediate the effects of openness, conscientiousness and approach trait on career adaptability. These results suggest that the positive self-view (CSE), the tendency of mastering new things (LGO), and the action orientation to make changes (proactive personality) accounts for the effects of basic traits on work-related outcomes (e.g., Bono & Judge, 2003; Spitzmuller et al., 2015; Zweig & Webster, 2004), but also explain their effects on career-related outcomes. Among all the basic traits in this model, the effects of conscientiousness and the approach trait are mediated by all three mediators. This indicates that both traits can enhance people's self-image, lead them to set ambitious goals and drive them to take proactive steps in achieving these goals. Moreover, the effect of openness is mediated by both LGO and proactive personality. It implies that LGO and proactive personality conveys the effects of open-mindedness on the ability to adapt in career development. Besides, the negative effects of neuroticism and avoidance are mediated by CSE, indicating that avoidance trait and neuroticism decrease people's evaluation towards themselves, which hinder

them from developing adaptive abilities. In addition, the final model shows that CSE serves as the strongest predictor for career adaptability, which suggests that a positive evaluation about oneself might be the most important component of career adaptivity.

The mediation models examined in this study also lay a solid foundation for future inquiry on career construction theory (Savickas, 2013). As a start, the three mediators revealed in this study suggest that the distal-proximal framework offers an important motivational perspective to understand the relationship between career adaptivity and career adaptability. Future research needs to examine other motivational mechanisms that can help to explain how the individual characteristics affect career adaptability. For example, recent research also shows that other dispositional factors such as hope, resilience and optimism (Buyukgoze-Kavas, 2016), as well as career-specific orientations, such as professional identification (Guan, Yang, Zhou, Tian, & Eves, 2016), career locus of control and criteria of career success (Zhou, Guan, Lai, Mak, & Deng, 2016), also serve as important predictors of career adaptability. Thus, future inquiries could test whether these constructs also link basic traits to career adaptability. This line of research will help to develop a more systematic view of the components and structure of career adaptivity.

In addition, the important role of behavior should also be considered in future work on the relationship between career adaptivity and adaptability. According to the distal-proximal framework, the motivational mechanisms should affect performance or other outcomes through the mediation of goal-pursuit behavior. Consistently, previous research has shown that career exploration behavior conveys the effects of proactive personality and self-esteem on career adaptability (Cai et al., 2015). A behavioral mediational approach can also help to identify the specific behaviors or activities that are relevant to the development of adaptive resources, which

will have great implications on how to design intervention programs to develop individuals' career adaptability. In sum, the integration of the motivational and behavioral mediators will help to develop a more sophisticated mediational model that connects individual factors to career adaptability and adaptation.

In spite of the significant relations discussed above, the results also show that the relative strengths and effective paths of predictors differ in this model. The effect of extraversion on career adaptability is not mediated by the above constructs. As extraversion is closely related to individuals' social orientation and social skills (Costa & McCrea, 1992), it is possible that the effect of extraversion can be explained by individuals' sociability. Empirical research could be conducted on this question in future research. In addition, the results also show that although the correlation between agreeableness and career adaptability is significant, when all the predictors were put together, the direct effect of agreeableness is non-significant, and none of the three mediators in this study account for the indirect effect of agreeableness on career adaptability. As previous research also found inconsistent findings on the relationship between agreeableness on career adaptability (Li et al., 2015; Teixeira et al., 2012; van Vianen et al., 2015; Zacher, 2014), it is possible that agreeableness may have mixed effects on career adaptability. On the one hand, a high level of agreeableness may help individuals to build a social network and gain social support for their personal development; on the other hand, individuals with high agreeableness are also at risk of being exploited by others (Costa & McCrea, 1992). As a result, the effect of agreeableness on career adaptability may not be that straightforward. To examine the possible mechanisms that can address this interesting question might be a possible direction for future research.

From a person-situation perspective, future research should also integrate contextual

factors to develop a more comprehensive view on the antecedents of career adaptability (Savickas, 2013). Research has revealed that family factors such as parental behavior (Guan et al., 2015), and organizational factors such as organizational support (Guan et al., 2016), serve as important predictors of career adaptability. Therefore, environmental factors should add incremental values in explaining the origins of career adaptability, and may also moderate the effects of individual factors on career adaptability. For example, a recent study has found that the positive relation between professional identification career adaptability is moderated by organizational support (Guan et al., 2016). Future research should continue to examine the interplay between individual and environmental factors in predicting career adaptability.

The results found in this research also have implications for career education and counseling practices. Since career adaptability serves as an important predictor for adaptive results, to understand the dispositional profile indicative of low adaptivity is informative for educators and career counselors. Findings of the current study confirm the important roles of basic traits in predicting career adaptability, but further suggest that CSE, LGO and proactive personality are the proximal dispositional factors that link these basic traits (except for extraversion) to career adaptability. These findings can help practitioners to choose effective instruments to identify clients who have low adaptivity and high risk of poor adaptation (Savickas, 2013). What we found in this study can also help practitioners to design appropriate intervention techniques to solve problems associated with indicators of low adaptivity. For example, for clients with low self-evaluation, career counselors can design structured interventions so that clients accumulate positive experiences from small successes, or gaining vicarious learning experiences by observing role models who show continuous progress in similar situations (Betz, 2004). For clients with a low level of proactive personality, career

counselors could implement relevant inventions, for example, proactive thinking training (Kirby, Kirby & Lewis, 2002), to help them think proactively, recognize and seize opportunities, and take actions to convert opportunities into adaptive resources. For clients with a low level of LGO, career counselors can design workshops to help clients form learning goals by encouraging clients to focus on the process rather than the performance of learning, to take mistakes as opportunities to learn, and to search for new approaches to improve their career skills (van Hooft & Noordzij, 2009).

Several limitations exist in the current study. First, although a two-wave design was adopted to reduce the common method variance (Podsakoff et al., 2003), this design cannot determine the causal relations between traits and career adaptability. Future research can address this question through use of a longitudinal design. Second, this study was conducted among a sample of Chinese students and whether the current results generalize to samples from other culture backgrounds awaits further examination. Besides, although all measures that are originally in English were translated into Chinese following a strict back-translation process, semantic equivalence issue could still remain because of different cultural background. More evidence should be presented to establish the validation of the measures in Chinese language and sample. In spite of the limitations discussed above, the study serves as the first attempt to systematically examine the mechanisms that connect basic traits to career adaptability, and our results suggest that the positive self-view (CSE), the tendency of mastering new things (LGO), as well as the action orientation to make changes (proactive personality) serve as important factors that explain the effects of basic traits on career adaptability. These findings help to develop a more in-depth understanding of career construction theory.

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escriptive Statistics and Inter-Correlations among Variables

s	M	SD	1	2	3	4	5	6	7	8	9	10	11
	3.72	.56	**.95**										
ess	3.70	.70	.34***	**.79**									
ersion	3.02	.89	.38***	.30***	**.88**								
ableness	3.92	.63	.35***	.28***	.27***	**.76**							
ientiousness	3.40	.64	.43***	.18**	.23***	.41***	**.73**						
ticism	3.09	.82	-.29***	-.28***	-.33***	-.23***	-.27***	**.82**					
elf-evaluation	3.43	.51	.52***	.36***	.37***	.39***	.51***	-.61***	**.84**				
ive Personality	3.47	.51	.57***	.56***	.37***	.30***	.48***	-.37***	.53***	**.84**			
ach	3.95	.59	.49***	.52***	.34***	.28***	.36***	-.27***	.46***	.63***	**.82**		
dance	3.11	.83	-.24***	-.20**	-.30***	-.25***	-.24***	.73***	-.60***	-.27***	-.19**	**.90**	
ing Goal Orientation	3.59	.67	.54***	.51***	.27***	.26***	.41***	-.21**	.40***	.68***	.60***	-.15*	**.89**

< .05. **p< .01. ***p< .001. Reliability coefficients appear on the diagonal in bold. T2= Time 2, CA=Career adaptability.

goal orientation and career adaptability.

Variables	CSE	Proa	LGO	CA	
				Model 1	Model 2
Age	-.07	.14	-.15	-.02	.00
Gender	-.02	.03	-.10	-.02	.00
Grade	.12	-.01	.11	.09	.04
Ranking	-.09	.02	-.07	-.04	-.01
Openness	.05	.32***	.23***	.04	-.08
Extraversion	.06	.08	.04	.18**	.14*
Agreeableness	.07	-.04	-.02	.10	.10
Conscientiousness	.25***	.27***	.22***	.22**	.06
Neuroticism	-.22**	-.12	.02	-.04	.03
Approach	.20**	.34***	.40***	.30***	.10
Avoidance	-.31***	.03	.01	-.03	.04
CSE					.24**
Proactive Personality					.18*
LGO					.24**
R^2	.62	.58	.48	.38	.47
Adjusted R^2	.60	.55	.45	.35	.43
F	28.47***	24.07***	16.32***	10.86***	12.01***

Notes: $^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$. N = 206. Standardized Beta coefficients are presented in this table.
CSE = Core self-evaluation, LGO = Learning goal orientation, CA= Career adaptability. Results were reported after controlling for age, gender, grade and ranking of university.

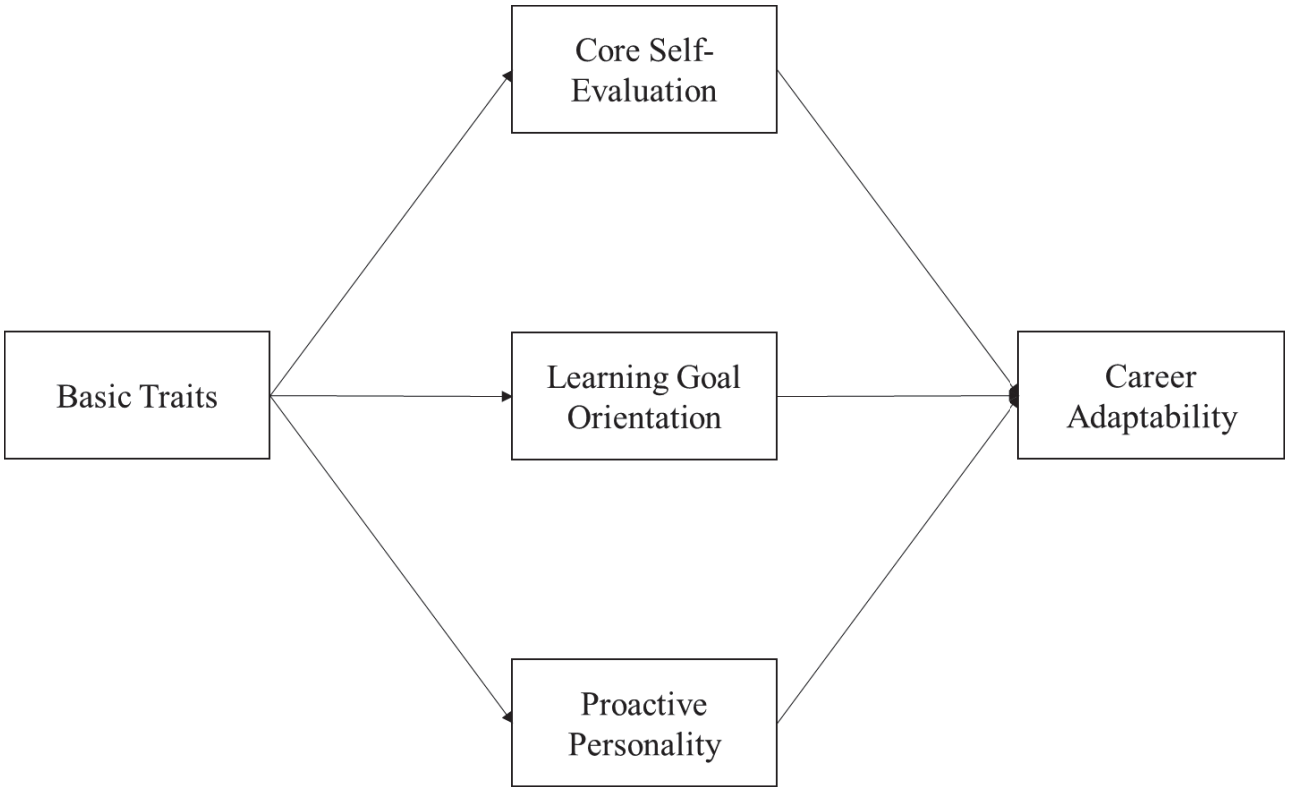
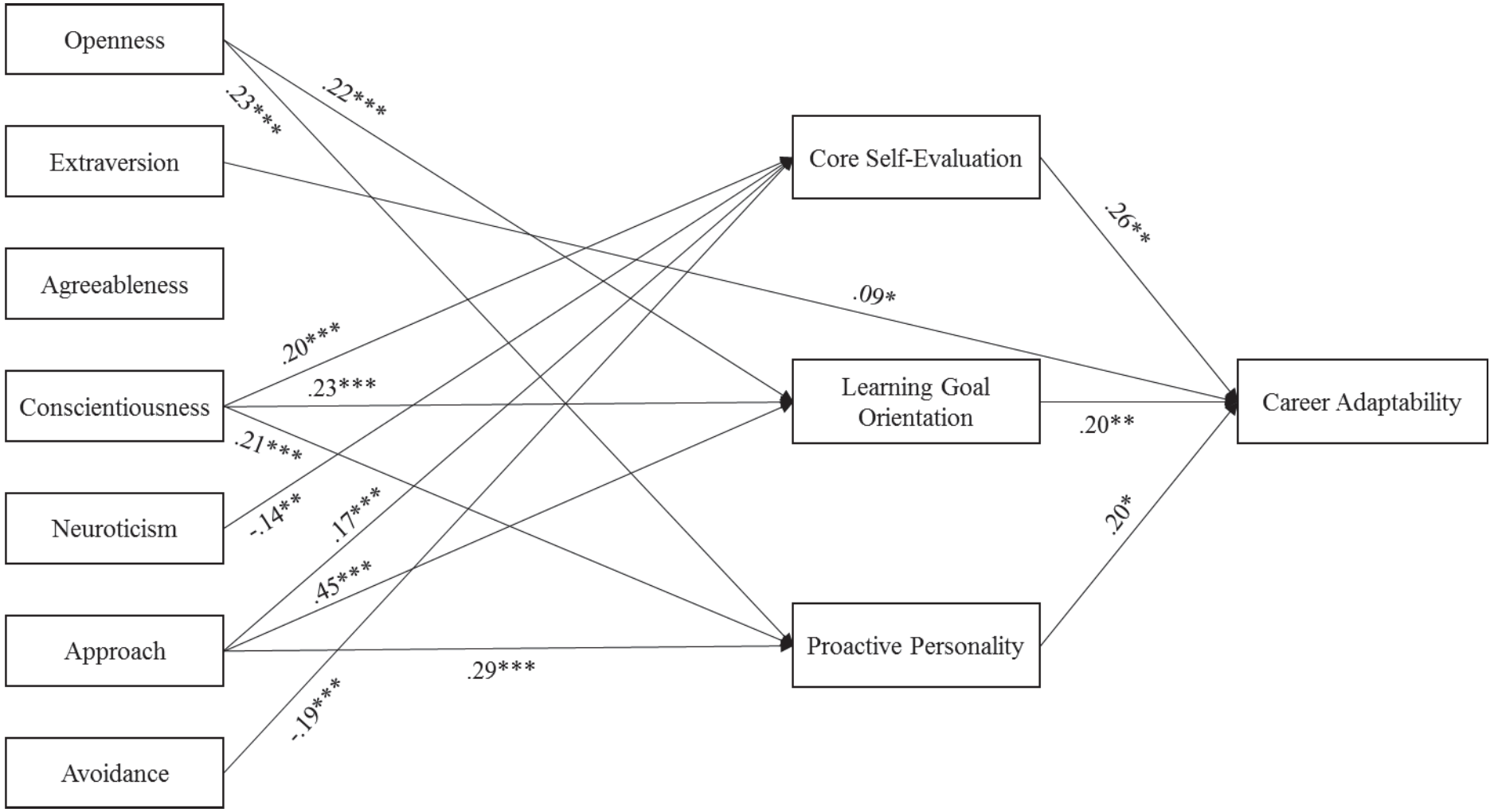


Figure 1 *The Proposed Mediation Model*



Notes: $^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$

Figure 2 *The Mediation Model*